(b) <u>REMARKS</u>:

The claims are 1-7 with claim 1 the sole independent claim. Claims 8 and 9 were cancelled in the Preliminary Amendment filed April 26, 2006 of record in the image filewrapper of the subject application.

Claims 1-4 and 6-7 were rejected as obvious over USPGP2003/044708 (Matsunaga) in view of Sawada USPGP2003/0039909 considered with JP 06-118700 (JP '700). Claim 4 was rejected as obvious over the same references further in view of Ohtani, USP4,789,613. Claims 8 and 9 were rejected as obvious over the same combination of references further in view of Aita '085 in view of Kotsugai '814.

The Examiner argues that Matsunaga '708 discloses each of the recitations in Claim 1 except the specific gravity of 1.3 to 1.7 g/cm3 and the dielectric loss tangent of Formula 1. The Examiner argues that Sawada discloses the specific gravity range and that JP '700 discloses the Formula 1 dielectric loss tangent. The grounds of rejection are respectfully traversed.

Initially, the rejection of claims 8 and 9 has been rendered moot by their cancellation in the Preliminary Amendment of April 26, 2006 and will not be discussed further.

Prior to addressing the grounds of rejection applicants wish to briefly review certain key features and advantages of the present claimed invention. As noted in specification paragraphs [0017]-[0024] the value of dielectric loss tangent is used to indicate how readily a magnetic toner retains its charge. In the present invention dielectric loss tangent indicates, specifically, the rate at which the charging property changes when temperature, humidity, bias, and the like are changed. Applicants have found that the value

of dielectric loss tangent can be reduced by improving the dispersibility of a magnetic material or body in a toner. The rate of change of dielectric loss tangent increases as lesser amounts of magnetic material are added. Therefore, at lower amounts of added magnetic material in the toner dielectric loss tangent rate increases.

Therefore, rate of change of dielectric loss tangent between an ordinary state and a weakly molten state (i.e. - above and below the glass transition temperature) indicates developer stability. As noted in paragraph [0022] the 100 Khz standard is used to examine the dispersed state around the (Tg)- glass transition temperature (i.e. ± 10°C of the Tg).

To control the dispersed state of the magnetic material in the toner the specification teaches various procedures in paragraph [0024]. Other embodiments are illustrated in paragraphs [0025]-[0032].

It has been found that to provide enhanced charge stability the dielectric loss tangent (tan ∂) of the toner at 100Khz satisfies formula (1) and is $\leq$0.20. In instant Table 6 the inventive toners have a toner have a tan ∂ from 0.007 to 0.19. In Comparative Examples 1, 2 and 4 the tan ∂ values are higher; 0.25, 0.31 and 0.42, respectively, all above the claimed maximum of 0.20. In Table 7 toner developer properties are provided. It is clear that for Comparative Examples 1, 2 and 4 that at different environments of temperature and humidity, the electrophotographic properties of the toner are severely degraded as compared to the inventive toners.

Regarding the art rejection the Examiner has stated that as a toner is heated to and beyond its glass transition temperature, the peak dielectric loss tangent (tan ∂) will coincide with the glass transition temperature of the toner, and the shape of the peak is

symmetrical. However, in the case of a <u>magnetic</u> toner, the dielectric loss tangent is greatly affected by polarization of a magnetic material in the toner. Accordingly, the shape of the dielectric loss tangent does not typically show the bilateral symmetry at the nexus of the glass transition temperature (Tg) of a resin as disclosed in Drawing 1 of JP '700. Where a toner contains magnetic material, the peak of the dielectric loss tangent is greatly affected by the way in which the magnetic material is dispersed in the toner (see instant specification, paragraph [0019]). Especially in the case of a toner which has a lower true specific gravity (1.3-1.7g/cm^3) and a reduced magnetic material content (25-70 parts magnetic material per 100 parts resin - [0029]) as in the toner of the present invention, the peak of the dielectric loss tangent is significantly affected by the dispersed state of the magnetic material in the toner. The instant claimed saturation magnetism reflects the presence of such reduced amounts of magnetic material.

Since in Comparative Examples 1, 2, and 4, the dispersed state of the magnetic material in the toner is unsatisfactory, the dielectric loss tangent (tan ∂) of Comparative Toners 1, 2, and 4 is not satisfied by formula (1) in present claim 1. Because the dielectric loss tangent (tan δ) of Comparative Toners 1, 2, and 4 is not satisfied the formula (1), this denotes that the shape of the dielectric loss tangent does not exhibit bilateral symmetry at the neighborhood of the glass transition temperature (Tg) of the resin. Thus, for the instant magnetic toner, the relationship between dielectric loss tangent and glass transition temperature (Tg) of the resin is far more complex than the simple symmetrical relationship disclosed in JP '700.

In addition, the toners of the Examples in the instant specification are obtained by methods designed to enhance the dispersability of the magnetic material in the

toner. For Example, the toner can be obtained by controlling the viscosity of a molten product through the adjustment of a kneading temperature to be equal to or higher than the softening point of the binder resin at the time of hot-melt kneading (see, page 12, paragraph [0019], of the specification).

The toner can also be produced, for example, by incorporating a larger amount low-molecular-weight component having a molecular weight of 10,000 or less into the binder resin (see, page 26, paragraph [0052].

Alternatively, for example, the toner can be obtained by employing a binder resin having a small particle size in the step of mixing raw materials (see, page 26, paragraph [0053]). The toners obtained by using the above exemplary methods have improved dispersability of the magnetic material in the toner. As a result, the dielectric loss tangent (tan ∂) of the toners are satisfied by formula (1) in claim 1.

As stated above, the theory disclosed in JP '700 cannot be simply applied to Matsunaga since the theory does not take into acount the effect of dispersibility of the magnetic material in the toner. Furthermore, the content of the magnetic material in Matsunaga is more than that in the present invention. Therefore, the true specific gravity of the toner is beyond that claimed in the present invention. In Matsunaga the magnetic material is generally present in amounts up to 200 parts per 100 parts binder and, in the Examples, typically 100 parts resin to 90 parts magnetic material, as contrasted to the 25-70 parts magnetic material per 100 parts binder typically present in applicants' toner. In Matsunaga the saturation magnetism is typically up to 200 Am^2/ka, preferably 70-100 Am^2/kg, as contrasted with 20-35 Am^2/kg of the present invention.

Therefore, Matsunaga does not teach improving the dispersed state of the magnetic material in a toner having a relatively low content of magnetic material. In Matsunaga, merely reducing the content of the magnetic material in the toner can not lead to a toner satisfying formula (1) of the present invention. The magnetic material must also be well dispersed. Additionally, Sawada, et al. does not disclose improving the dispersed state of a metallic material.

The claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

/Peter Saxon/
Peter Saxon
Attorney for Applicants
Registration No. 24,947

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

FCHS_WS 2705220v1